

Mothers' Beverage Choices Vital to Girls' Bone Health

A study at the Children's Nutrition Research Center in Houston, Texas, showed that girls who developed good milk-drinking habits in early childhood continue to drink significant amounts of milk that will ultimately affect their bone health as adults.

ADAM GILLUM (D034-1)



Parents concerned about a young daughter's bone health should make milk part of their child's mealtime routine. This is according to a study by Agricultural Research Service scientists at the Children's Nutrition Research Center (CNRC) in Houston, Texas. The center is operated by the Baylor College of Medicine in cooperation with Texas Children's Hospital.

Jennifer O. Fisher, a CNRC behavioral scientist and assistant professor of pediatrics at Baylor College of Medicine, led the study. Fisher and her research team followed more than 180 central-Pennsylvania, 5-year-old girls for 5 years.

Their objective was to test whether mothers' beverage choices affected their daughters' long-term beverage choices and whether the girls' beverage-drinking habits were linked to their bone health. This was the first study to investigate maternal influences on beverage-drinking habits spanning the course of middle childhood.

In previous studies, Fisher found that mothers who drank the most milk had 5-year-old daughters who also drank more milk, but the reason for this similarity, and whether the girls' long-term beverage habits affected bone health, was unknown.

After following the mothers and daughters for 5 years, Fisher found the answer: Mothers who drank more milk also served it more often to their 5-year-old daughters at meal and snack times.

Since the focus of this research was to evaluate the role of beverage intake on meeting calcium recommendations, only milk consumed as a beverage was counted. Milk consumed with other foods, like cereal, or as part of a recipe did not count towards calcium intake for this study.

Results showed that girls who regularly met their calcium needs during the study drank an average of 13 ounces of milk per day, which was almost twice the amount consumed by the girls who did not meet their calcium needs. Girls consuming greater amounts of calcium had better measurements of bone health at the end of the study.

"Though both groups drank sweetened beverages, like sodas or fruit drinks, as they got older, the frequency with which milk was served at meals and snacks was most closely aligned with drinking significant amounts of milk and getting enough calcium through age 9," says Fisher.

"It appears that food routines developed by mothers for their preschool-aged children tend to lead to life-long food habits that will ultimately affect their children's bone health when they become adults."

While milk was the main source of calcium in the diets of the girls in this study, Fisher suggests that parents of girls who don't care for milk can still foster healthy beverage-drinking habits. They should routinely serve other calcium-rich drinks, like calcium-fortified orange juice or soy milk, with meals. Children who are lactose intolerant can often consume fermented milk products like cheese and yogurt as well as lactose-free fluid milk.

Findings from the study were published in the April 2004 issue of the *American Journal of Clinical Nutrition*.
—By **Alfredo Flores**, ARS.

This research is part of Human Nutrition, an ARS National Program (#107) described on the World Wide Web at www.nps.ars.usda.gov.

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